Fast Algorithm for Cloud Segementation and Cloud Classification from Satellite Images and Applications

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Abstract: Cloud region is provided in meteorological satellite images for every hour. Cloud segmentation is an important task to classify from its backgroud image before further combination for warning system and weather prediction. This paper proposes the fast algorithm for cloud segmentation and cloud classification for rain prediction and weather forecast from a set of satellite input images. Image processing and scanline technique are applied in the algorithm for fast pixel processing. Set of cloud pixels is classified by pixel intensity for different water density in cloud. Set of cloud segmentation images is visualized in 3-dimensional space for widely understanding. The algorithm provides the direction and speed of cloud movement for each subregion in South-East Asia satelite images. The investigated software is implemented using object pascal language and OpenGL library. The software can be used for natural disaster management for global and local communities.

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